



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

F162797

D350-748-103
Job Sheet 164731



Part No: D350-748-103

Job Qty: 1 ea

5004735

Part Name: AS350 / AS355 Stainless Steel Fwd Crosstube



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/31/17

Created By: Mario Poulin

Type: Stock

Description:

Customer: Air Methods Corporation (CAMET01)

7301 South Peoria Street Englewood, CO, 80112 USA ph:(303) 792-7400

Note: DWG REV A IPP REV:A 15.03.23 NEW ISSUE DD VERF:JLM

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
D350-748-103	DWG REV A IPP REV:A 15.03.23 NEW ISSUE DD VERF:JLM		0.000	
AS350 / AS355 Stainless Steel				
Fwd Crosstube				
AETC-1032			0.000	
Insert				
AN4-41A			0.000	
Bolt				
AN4-6A			0.000	
Bolt				
AN5-32A			0.000	
Bolt				
D350-748-143TRN	DWG REV A NEW ISSUE - PRELIM - LL 12.05.08		0.000	
Ss Crosstube Turning Detail				
D3500-1	DWG REV C IPP Rev:A New Issue 06-06-15 JLM		0.000	
Saddle				
D3501-1	DWG REV A IPP Rev:A New Issue 06-05-09 JLM		0.000	
Bushing				
D3502-1	DWG REV B IPP Rev:A New Issue 06-07-06 JLM IPP Rev:B Add tooling hole 07-03-28 Esr rev C added DT9430 08.11.03 EC verified by:DD		0.000	
Support				
D5123-7	DWG REV D IPP REV:A 15.03.19 NEW ISSUE DD VERF:JLM IPP REV:B 16-11-11 AS PER DWG REV.D DD VERF:JLM		0.000	
Clamp Cushion				
MS21042L4			0.000	
Nut				
MS21042L5			0.000	
Nut				
MS21920-20			0.000	
Clamp				
MS51958-63			0.000	
Screw				
NAS1149C0363R			0.000	
Washer				
NAS1149D0463J			0.000	
Washer				
NAS1149D0563J			0.000	
Washer				

Job Routing

Op No	Operation	Qty	Due Date	Standard	Workcenter/Supplier	Lead Time
					Workcenter / Supplier	

DART
AEROSPACE
S004505



DART
AEROSPACE
S010256



AS350 / AS355 Stainless Steel Fwd Crosstube

PART NO: D350 - 748 - 103
Revision:
Operation: QC
Change No:

Dart Aerospace Ltd.

1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Dart Aerospace Ltd.

1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Mfg Date: 11/15/17

Job No: 164731

			Setup hrs	Run Hrs	
90	Start up Operation	1 Ea 10/28/17	0.00	0.00	Start up container
100	DC	1 pcs 10/28/17	0.00	0.00	DC
110	CNC Bend Skid tubes	1 pcs 10/30/17	6.53	3.45	CNC Bend Skid tube
120	Crosstubes	1 pcs 10/30/17	0.00	2.08	Crosstube
127	QC	1 pcs 10/30/17	0.00	0.00	QC15 PD 17-11-2
128	Crosstubes	1 pcs 10/30/17	0.00	2.08	Crosstube
130	Crosstubes	1 pcs 10/30/17	0.00	2.08	Crosstube DAS
140	QC	1 pcs 10/30/17	0.00	0.00	QC5 38
174	Outsource	1 pcs 10/30/17	0.00	0.00	Outsource2 9-89
176	Packaging	1 pcs 10/30/17	0.00	0.00	Packaging2
178	QC	1 pcs 10/30/17	0.00	0.00	QC5 17-11-20 38
180	Spray Paint	1 pcs 10/30/17	0.00	1.00	Spray Paint A8 NOV 1 1 2017
190	QC	1 pcs 10/30/17	0.00	0.00	QC14 38
200	Crosstubes	1 pcs 10/31/17	0.00	2.08	Crosstube A8 NOV 1 2 2017
210	QC	1 pcs 10/31/17	0.00	0.00	QC5 38
220	Packaging	1 pcs 10/31/17	0.00	0.00	Packaging1 5m/3 9-89
230	QC	1 pcs 10/31/17	0.00	0.00	QC4 5m/3
240	Packaging	1 pcs 10/31/17	0.00	0.00	Packaging3 5m/3
250	QC21-FG	1 Ea 10/31/17	0.00	0.00	QC21

Part Op 100 - Photocopy bluefile & type labels per PPPD350-748-103 CHG001

Descriptions: 110 - Bend tube as per Dwg D350-748-143 using CNC bender program D350F and Folio FT _____

120 - ****VERIFY CROSSTUBE DIMENSIONS AS PER DWG****

127 - ****MARK CUT LINES***

128 - CUT TUBE AT HEIGHT ON FAI SHEET

130 - 2- Drill Tube as per Dwg D350-748-143 Using DT8876 A,B & C Drill Jigs, 4- Engrave Part # and Batch # as per Dwg D350-748-143 5- Remove all marks from tube within limits of D350-748-143

140 - CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)

174 - ISSUE P/O TO ACUREN:

180 - ****VERIFY BY _____ BATCH # TO MATCH W/O _____ 1. Apply Axalta 13205S Cleaner

inside and outside crosstube per QSI 005 4.1.4 ***LIMIT AIR PRESSURE TO 50 PSI WHEN INSTALLING AETC-1032 INSERT AND ONLY EXPAND INSERT ONCE***

190 - Then, Wrap in plastic bag to protect from scratches

200 - INSTALL GROUND WIRE INSERT, THEN INSERT SCREW AND WASHER 2-Install supports with Proseal 890 per D350-748-143 and QSI 015 138408 exp 2/18

210 - ***RE-CHECK TORQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***

230 - ****VERIFY BY _____ BATCH # TO MATCH W/O _____

240 - Identify and pack for shipping as per PPP D350-748-103

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	AETC-1032 FM137335	①	0	0	0
	D350-748-143TRN F162777	①	0	0	0
	D3502-1 F161764	②	0	0	0
	D5123-7 153236	②	0	0	0
	MS21920-20 138246①	① 137587①	0	0	0
	MS51958-63 FM134962	①	0	0	0
	NAS1149C0363R 138326	①	0	0	0
220-Packaging	✓AN4-41A 5013263	⑧	0	0	0
	✓AN4-6A 5013260	⑧	0	0	0
	✓AN5-32A 5013257	④	0	0	0
	✓D3500-1 5013248	④	0	0	0
	✓D3501-1 5013244	⑧	0	0	0
	MS21042L4 5016379	24 -0	0	0	0
	MS21042L5 5013244	④	0	0	0
	✓NAS1149D0463J 5014940	32 -0	0	0	0
	✓NAS1149D0563J 5013252	⑧	0	0	0
	5016407				

Part Specifications

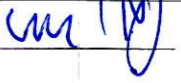
Specifications could not be found.

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 1

Item ID: D350-748-103**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** AS350 / AS355 Stainless Steel Fwd Crosstube**Start Date:** 8/3/2017 **Start Qty:** 1.00 ***1*****Cust Item ID:****Required Date:** 9/1/2017 **Req'd Qty:** 1.00 ***1*****Customer:****Reference:****Approvals:****Process Plan:** **Date:** 17/7/28**Tooling:****Date:****Run Start *NR1*****QC:****Date:****SPC (Y/N):****Date:****Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D350-748-143	A

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPPD350-748-103 CHG001

110

1.77

110

BENDING MACHINE - CROSSTUBES

CNC Bend 1

Memo

1.13

CNC Delta 100 Bender

Bend tube as per Dwg D350-748-143 using CNC bender program D350F and Folio FT

****UNDER BEND .225" PER SIDE****

****USE (4) DT9824 SHIM BLOC TO CHECK STRAIGHTNESS****

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 2

Item ID: D350-748-103

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 9/1/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

127

QC15- Crosstube Dimensional Check

0.00

127

QC

Memo

0.00

Quality Control

MARK CUT LINES

128

0.00

128

Crosstubes

Memo

1.19

Crosstubes

CUT TUBE AT HEIGHT ON FAI SHEET

VERF HEIGHT _____ BY QC 15 LEVEL INSPECTOR _____

VERF TWIST _____ BY QC15 LEVEL INSPECTOR _____

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 3

Item ID: D350-748-103

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 9/1/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

0.75

130

Crosstubes

Crosstubes

Memo

1.83

Crosstubes

2- Drill Tube as per Dwg D350-748-143 Using DT8876 A,B & C Drill Jigs,
Set-up drill table as per QSI 010

3- Deburr

4- Engrave Part # and Batch # as per Dwg D350-748-143

5- Remove all marks from tube within limits of D350-748-143

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.00

Quality Control

CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 4

Item ID: D350-748-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 9/1/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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174

Outsource process - NDT per QSI038 4.1

0.00

174

Outsource2

Memo

48.00

Outsource process - NDT

ISSUE P/O TO ACUREN: _____

176

Receive & Inspect for Damage & Mat'l Certs

0.00

176

Packaging

Memo

0.00

Packaging

178

QC5- Inspect part completeness to step on W/O

0.00

178

QC

Memo

0.00

Quality Control

1X80771-15

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 5

Item ID: D350-748-103**Revision ID:****Item Name:** AS350 / AS355 Stainless Steel Fwd Crosstube**Start Date:** 8/3/2017**Start Qty:** 1.00***1*****Required Date:** 9/1/2017**Req'd Qty:** 1.00***1*****Reference:****Accept*****N900040100*****Setup Start*****NS1*****Stop*****NS2*****Cust Item ID:****Customer:****Approvals:****Process Plan:** _____**Date:** _____**Tooling:** _____**Date:** _____**QC:** _____**Date:** _____**SPC (Y/N):** _____**Date:** _____**Run Start*****NR1*****Stop*****NR2*****Sequence ID/
Work Center ID****Operation
Description****Set Up/
Run Hours****Tool ID****Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp**

180

Spray Painting per QSI005 4.2

0.00

180

SprayPaint

SprayPaint

Memo

0.58

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

MASK SCRIBE B# & P# AND VERIFY

1. Apply Axalta 13205S Cleaner inside and outside crosstube per QSI 005 4.1.4
BATCH: _____2. Axalta 230S Metalok inside and outside crosstube per QSI 005 4.1.4
BATCH: _____3. Prime inside and outside crosstube per QSI 005 4.2
BATCH: _____4. Paint outside of crosstube per QSI 005 4.2
BATCH: _____

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 6

Item ID: D350-748-103

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 9/1/2017 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

QC14- Inspect Spray Paint

0.00

190

0.00

QC

Memo

Quality Control

Then, Wrap in plastic bag to protect from scratches

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 7

Item ID: D350-748-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017

Start Qty: 1.00

1

Cust Item ID:

Required Date: 9/1/2017

Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Run Start ***NR1***Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

200

0.00

200

Crosstubes

Crosstubes

Memo

2.82

INSTALL GROUND WIRE INSERT, THEN INSERT SCREW AND WASHER

***LIMIT AIR PRESSURE TO 50 PSI WHEN INSTALLING AETC-1032
INSERT AND ONLY EXPAND INSERT ONCE***1-Abrade mating surfaces of support and crosstube with 180 grit sandpaper,
clean the area with MEK or equivalent as per dwg

2-Install supports with Proseal 890 per D350-748-143 and QSI 015

A/R Proseal 890

Batch: _____

EXP: _____

3-Install supports clamps Using Dt8876 as per Dwg D350-748-141, Torque to
60-80 IN-LBS.

PROSEAL CURE TIME 72 HOURS:

Start: _____

Finish: _____

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED
FOR 72HOURS AS PER DWG.***

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 8

Item ID: D350-748-103**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** AS350 / AS355 Stainless Steel Fwd Crosstube**Start Date:** 8/3/2017 **Start Qty:** 1.00 ***1*****Cust Item ID:****Required Date:** 9/1/2017 **Req'd Qty:** 1.00 ***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start *NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

Quality Control

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED
FOR 72HOURS AS PER DWG.***

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

220

Pick Kit

0.00

220

Packaging

Memo

0.00

Packaging

Work Order ID 164731

Friday, July 28, 2017 8:47:29 AM

164731

Page 9

Item ID: D350-748-103**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** AS350 / AS355 Stainless Steel Fwd Crosstube**Start Date:** 8/3/2017 **Start Qty:** 1.00 ***1*****Cust Item ID:****Required Date:** 9/1/2017 **Req'd Qty:** 1.00 ***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start *NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230 *230* QC Quality Control	QC4- 100% Inspect kits for completeness Memo ***VERIFY BY _____ BATCH # TO MATCH W/O _____ ***VERIFY BY _____ PART # TO MATCH W/O _____	0.00 0.00				_____	_____	_____	_____
240 *240* Packaging Packaging	Identify as per dwg & Stock Location: _____ Packaging Memo Identify and pack for shipping as per PPP D350-748-103 Location: _____ PPP Rev: _____	0.00 0.00				_____	_____	_____	_____
250 *250* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00				_____	_____	_____	_____

Picklist Print

Friday, July 28, 2017 8:47:29 AM

Page 1

Work Order ID: 164731

164731

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 15.03.23 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D350-748-143TRN *D350-748-143TRN* SS Crosstube Turning Detail		Manufactured	No			200	Each	3.0000	1	1			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					LG014			3					
					156965			1					
					156966			1					
					157172			1					
D3502-1 *D3502-1* Support		Manufactured	No			200	Each	58.0000	2	2			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					LG052			58					
					150010			14					
					150683			2					
					158881			20					
					161764			22					
D5123-7 *D5123-7* Clamp Cushion		Manufactured	No			200	Each	104.0000	2	2			
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					LG052			104					
					151551			12					
					153236			92					

Picklist Print

Friday, July 28, 2017 8:47:29 AM

Page 2

Work Order ID: 164731

164731

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

AETC-1032

Purchased No

200 Each 56.0000 1 1

AETC-1032

Insert

******LocationLoc QtyLoc Code

LG050

6

m133732

6

st555

50

m137335

50

NAS1149C0363R

Purchased No

200 Each 281.0000 1 1

NAS1149C0363R

Washer

******LocationLoc QtyLoc Code

266

184

m137495

184

FP001

91

m133077

91

GA

6

m133077

6

Picklist Print

Friday, July 28, 2017 8:47:29 AM

Page 3

Work Order ID: 164731

Parent Item: D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

164731***D350-748-103***

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

MS21920-20

Purchased No

200

Each

171.0000

2

2

MS21920-20

Clamp

******LocationLoc QtyLoc Code

FG

2

122254

2

LG050

167

m137587

50

m137710

42

m137820

25

m137963

25

m138040

25

LG056

2

m128650

1

m132675

1

MS51958-63

Purchased No

200

Each

90.0000

1

1

MS51958-63

Screw

******LocationLoc QtyLoc Code

ST267

90

m134962

90

AN4-6A

Purchased No

220

Each

1,083.000

16

16

AN4-6A

BOLT

******LocationLoc QtyLoc Code

over003

1000

M137951

500

M138045

500

ST345

83

M137464

83

Friday, July 28, 2017 8:47:29 AM

Shop Packet Print

Page 3

Picklist Print

Friday, July 28, 2017 8:47:29 AM

Page 4

Work Order ID: 164731

164731

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

D3500-1

Manufactured No

220 Each 52.0000 4 4

D3500-1

Saddle

Location

Loc Qty

Loc Code

ST406

52

158741

32

162429

20

AN5-32A

Purchased No

220 Each 308.0000 4 4

AN5-32A

Bolt

Location

Loc Qty

Loc Code

over004

245

m137853

120

m137951

75

m138045

50

ST336

63

m137464

63

NAS1149D0463J

Purchased No

220 Each 3,730.000 32 32

NAS1149D0463.J

Washer

Location

Loc Qty

Loc Code

GA

558

M135056

40

M137699

518

ST260a

2600

M137988

600

M138084

2000

ST263

572

M137699

572

Friday, July 28, 2017 8:47:29 AM

Shop Packet Print

Page 4

Picklist Print

Friday, July 28, 2017 8:47:29 AM

Page 5

Work Order ID: 164731

Parent Item: D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

164731***D350-748-103***

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

D3501-1

Manufactured No

220

Each

523.0000

16

16

D3501-1

Bushing

******LocationLoc QtyLoc Code

ST037

3

159311

3

ST038

120

161783

120

ST038A

400

163502

200

163863

200

AN4-41A

Purchased

No

220

Each

342.0000

8

8

AN4-41A

Bolt

******LocationLoc QtyLoc Code

over003

320

m137544

120

m137951

125

m138045

75

ST342

22

m137464

22

MS21042L5

Purchased

No

220

Each

545.0000

4

4

MS21042L5

Nut

******LocationLoc QtyLoc Code

GA

12

m127813

12

ST303

533

m137587

333

m137963

200

Friday, July 28, 2017 8:47:29 AM

Shop Packet Print

Page 5

Picklist Print

Friday, July 28, 2017 8:47:29 AM

Page 6

Work Order ID: 164731

164731

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 8/3/2017

Required Date: 9/1/2017

Start Qty: 1.00

Required Qty: 1.00

MS21042L4

Purchased

No

220

Each

2,388.000

24

24

MS21042L4******

Nut

LocationLoc QtyLoc Code

FP001

10

m133363

10

GA

11

m135058

11

OVER007

1000

m138084

1000

ST303

1367

m137680

367

m137988

1000

NAS1149D0563J

Purchased

No

220

Each

1,670.000

8

8

NAS1149D0563J******

Washer

LocationLoc QtyLoc Code

GA

36

m135774

36

ST260a

700

m138040

700

ST263

934

m137587

234

m137820

700

Friday, July 28, 2017 8:47:29 AM

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Page 6

Item	Qty -143	Part Number	Description
	X	D350-748-143	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
1	1	D6021-125	CROSSTUBE
2	2	D3502-1	SUPPORT
3	2	D5123-7	CLAMP CUSHION
4	1	AETC-1032	INSERT
5	2	MS21920-20 OR MS21920-21/-22	CLAMP (PER DART SPEC. M-MS21920-20/-21/-22)
6	1	NAS1149C0363R	WASHER (OR AN860C10)
7	1	NAS1635-3-8	SCREW (OR MS51958-63)
8	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6021-125 (17-4PH)
FINISHED LENGTH AFTER TURNING = 112.270±0.06 (AFTER BENDING/TRIMMING = 110.27 REF)
- 2) FINISH: PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCE: PER DART QSI 018 UNLESS OTHERWISE NOTED.
WALL THICKNESS ECCENTRICITY PER DART QSI 038 7.2
MIN. ALLOWABLE WALL IS -0.020 FROM NOMINAL
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART PART NUMBER 'D350-748-143' AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.290 HOLE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.

TURNING

- 10) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES PER SIDE. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D. ON TOP HALF OF BEND, AND 8% ON BOTTOM HALF OF BEND.
- 12) MAX AMPLITUDE OF RIBBLING ALONG BENT PORTION OF THE TUBE IS 0.030 (ZN A1-3)
- 13) MAX TWIST: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38 (ZN C1-3).

ASSEMBLY

- 14) TO INSTALL D3502-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.02" TO 0.05" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

SHOP COPY
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 164731

UM 17/7/28

UNDER REVIEW

9/15/12/24
GRF 18-561 9/12/29

DEO ATTACHED

RELEASED

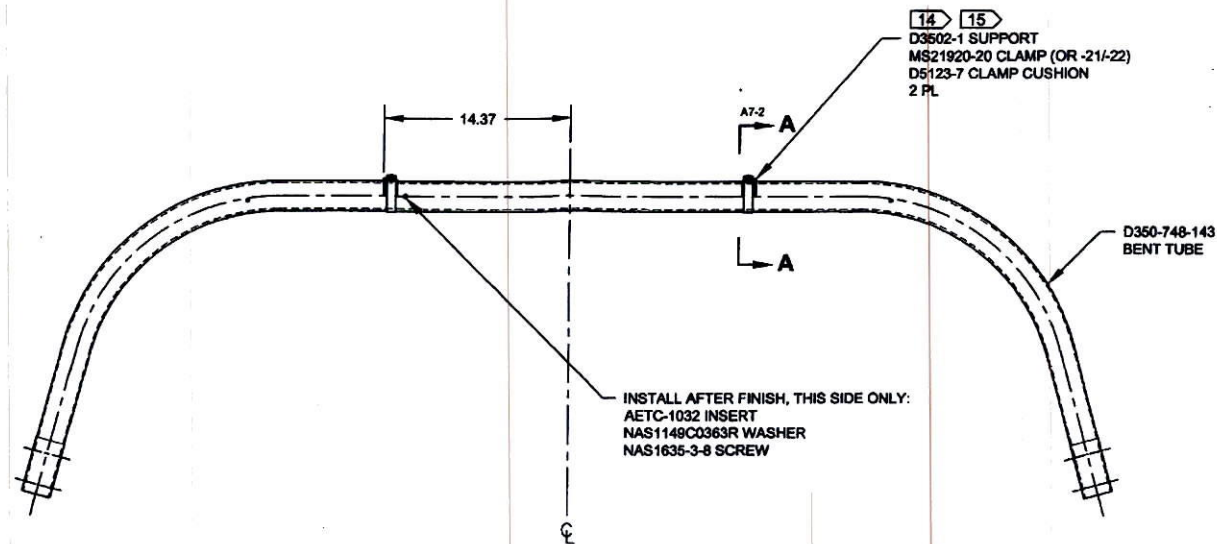
2015 MAR 18

9 EN 15-547

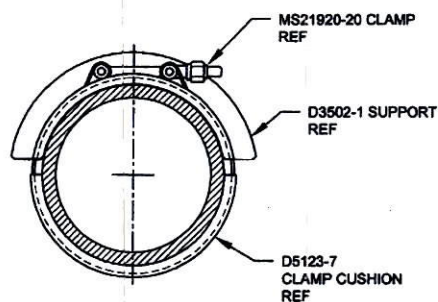
A	NEW ISSUE	CP	15.01.21
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	15.01.21		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D350-748-143	REV. A SHEET 1 OF 4
TITLE CROSSTUBE (AS 350/355 HI FWD)	SCALE NTS

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**D350-748-143
ASSEMBLY DETAIL**



SECTION A-A D4-2
SCALE 6X

DEO ATTACHED

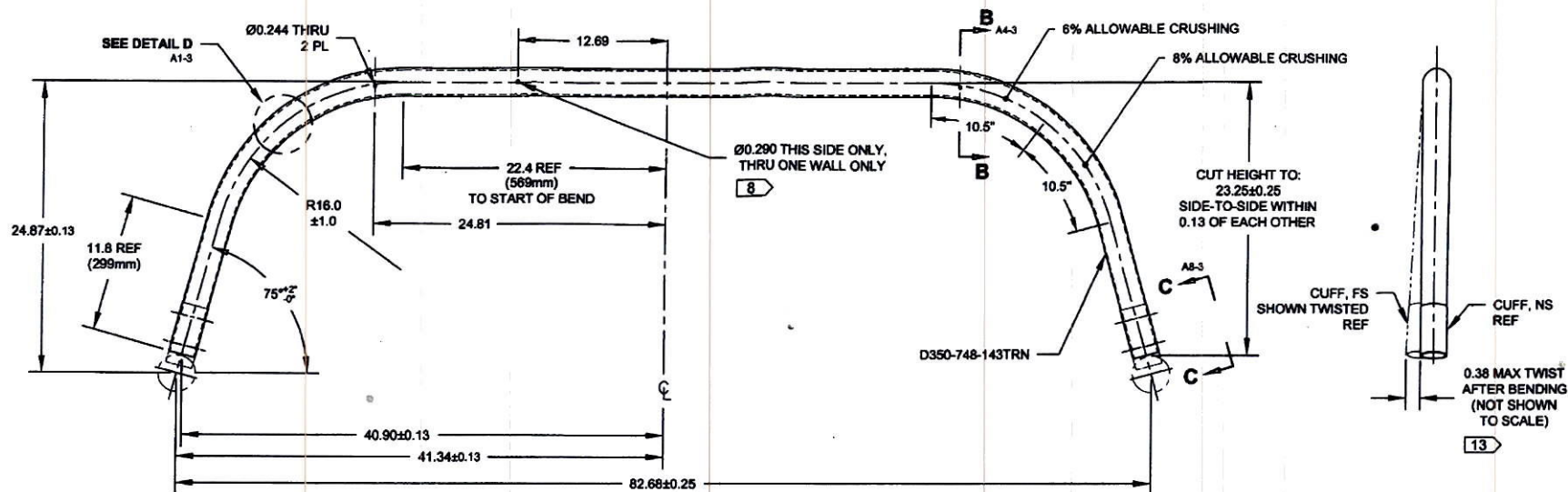
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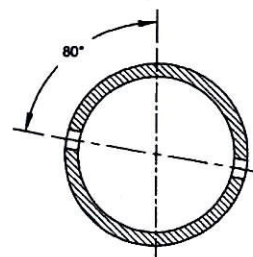
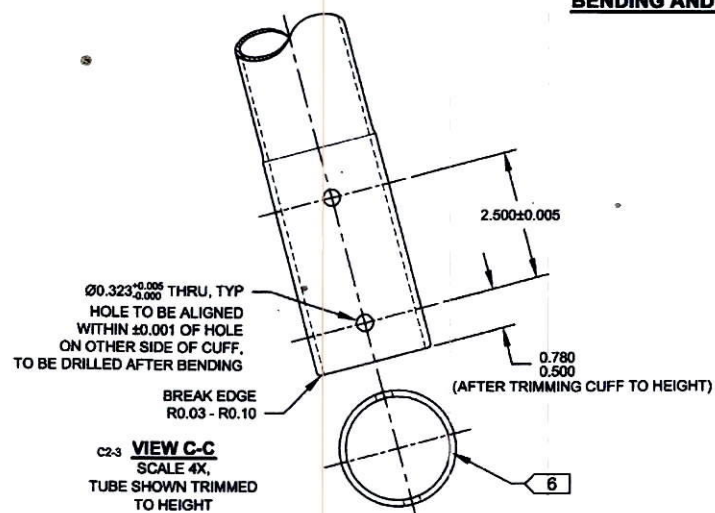
UNDER REVIEW

9/15/23 ok 9/24/23

DESIGN	47	DART AEROSPACE LTD	
DRAWN	47	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. A
MFG. APPR.		D350-748-143	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
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D350-748-143
BENDING AND DRILLING DETAIL 11



SECTION B-B D3-3
SCALE 6X

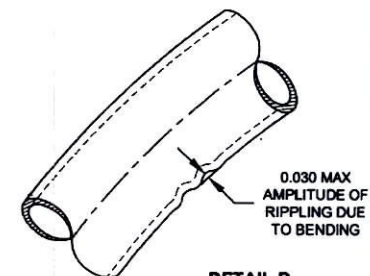
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2015 MAR 18

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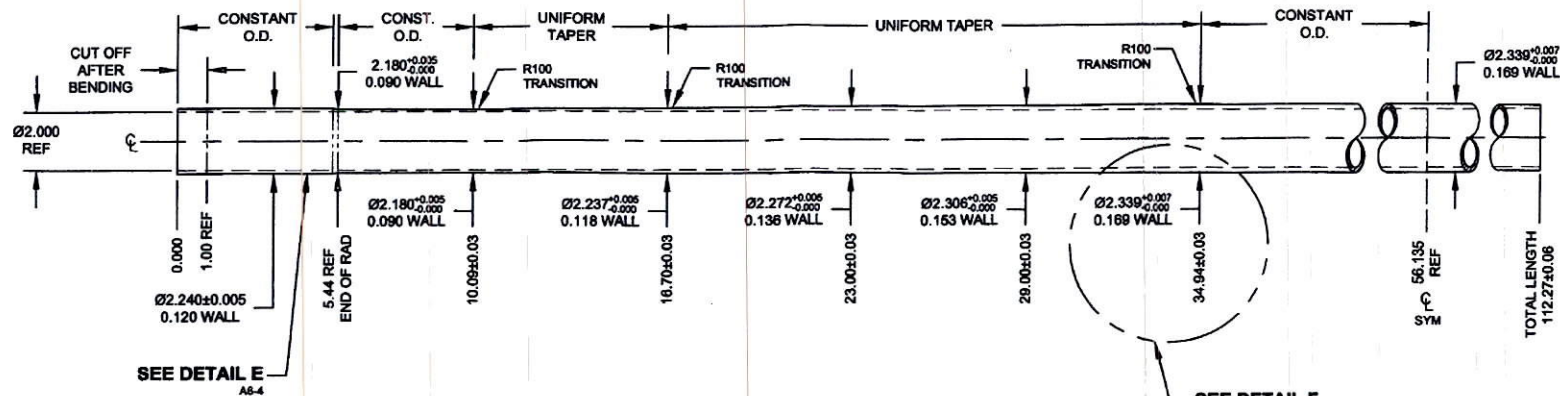
UNDER REVIEW

15/01/21
9/4/21



DETAIL D D7-3
SCALE 4X
RIPPING EXAGGERATED

DESIGN	9P	DART AEROSPACE LTD	
DRAWN	9P	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. A
MFG. APPR.	[Signature]	D350-748-143	SHEET 3 OF 4
APPROVED	[Signature]	TITLE	SCALE
DE APPR.	[Signature]	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	15.01.21	COPYRIGHT © 2015 BY DART AEROSPACE LTD	
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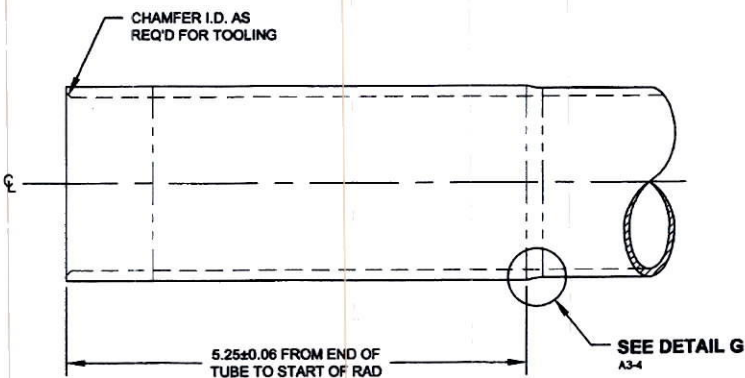


**D350-748-143TRN
TURNING DETAIL**

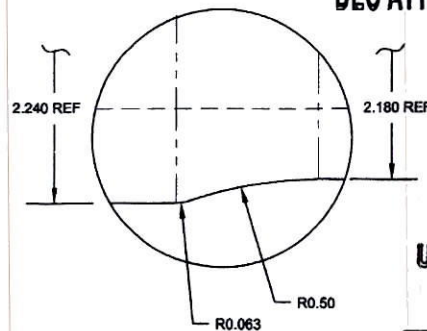
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2015 MAR 18

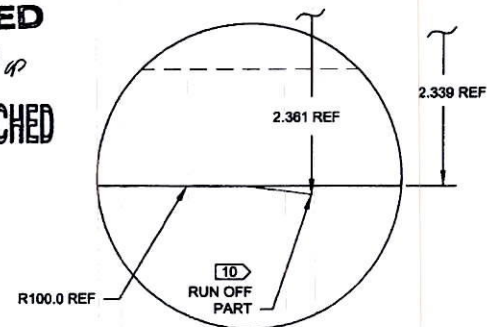
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**DETAIL E:
CROSSTUBE CUFF** C7-4
SCALE 3X



**DETAIL G:
CUFF TRANSITION** A5-4
NOT TO SCALE



**DETAIL F:
TOOL RUN-OFF** C3-4
NOT TO SCALE

UNDER REVIEW

15/1/28

DESIGN	g	DART AEROSPACE LTD	
DRAWN	g	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. A
MFG. APPR.		D350-748-143	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
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DRAWING NO. D350-748-143	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D350-748-143-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>qp</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>			
DATE 15.11.18	DATE 15.11.18	DATE 16.02.19	DATE FEB 19 2016	DATE 2016.02.19			

AMEND NOTE 2 (SHEET 1) AS FOLLOWS:

- 2) FINISH: PREPARE SURFACE PER DART QSI 005 4.1.4
 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 PAINT OUTSIDE PER DART QSI 005 4.2
 OR
 POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3

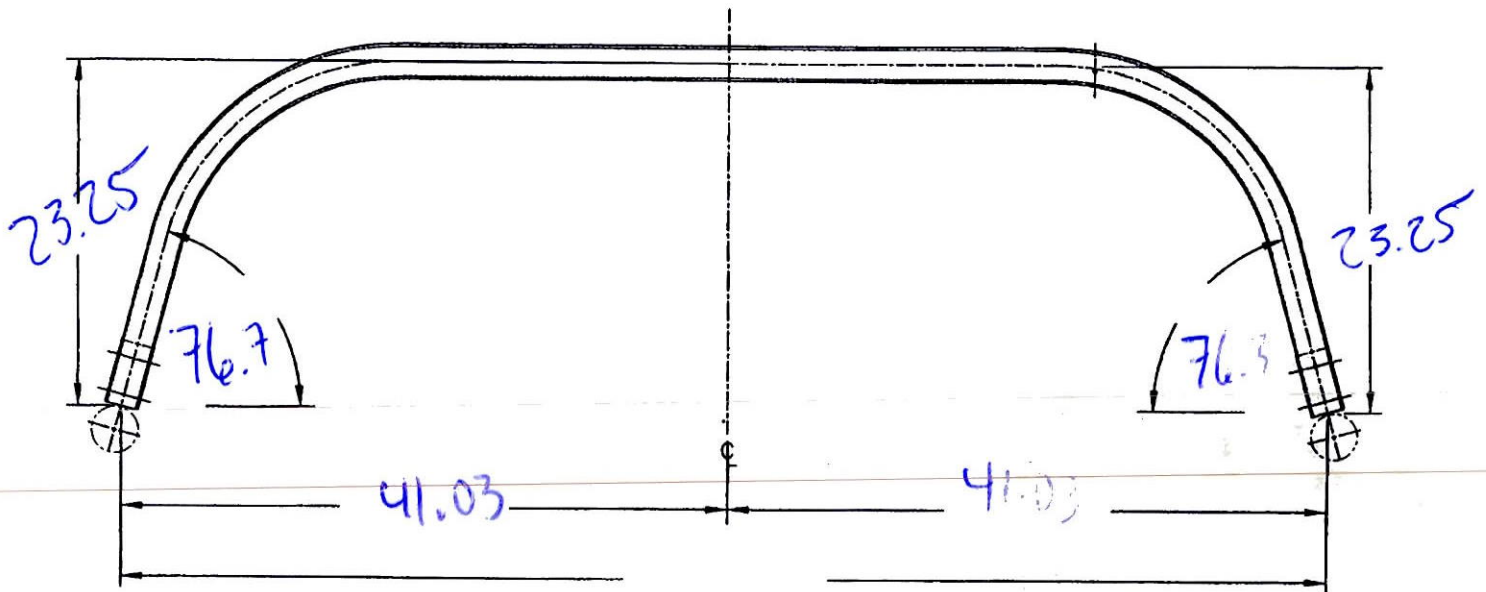
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 2016-02-26

EN 16-534

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DART AEROSPACE LTD	Work Order: 164731
Description: Crosstube High Fwd, SS (AS350/355)	Part Number: D350-748-103
Inspection Dwg: D350-748-143 Rev: A	Page 1 of 1

Required Dimension	Min	Max
Height	23.00	23.50
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.55	82.05
Bending Passes	7	--
Crushing	--	8%
Twist	--	0.38



	Side A	Side B
Bending Passes	34	34
Crushing	6	6.27
Comments		
Twist = 0.137"		

QC15 Inspection	PD
Date	17.11.2

Rev	Date	Change	Revised by	Approved
A	15.09.09	New Issue	KJ	AA

41.03

34

0 = Tent

11.03



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038325

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO038325
PO Date: 11/10/17
Due Date: 11/10/17
Purchase Order Revision:
Revision Date:
Ship-To Contact: Baker, Diane
Phone: dbaker@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items												
Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	166319	D4883-7	-	End Fitting Outsource process - NDT per QSI038 4.1 Issue P/O: _____ LPI Per ASTM 1417 LEVEL 2 Certificate of conformaty is required.		Firmed	11/10/17	3 pcs	0 pcs	3 pcs	\$76.00/pcs	\$228.00
2	166320	D4880-1	-	Strut		Firmed	11/10/17	4 pcs	0 pcs	4 pcs	\$76.00/pcs	\$304.00
3	164477	D119-796-141	-	Fwd Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
4	158989	D350-748-203	-	AS350 / AS355 Stainless Steel Aft Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
5	164645	D350-748-203	-	AS350 / AS355 Stainless Steel Aft Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
6	164731	D350-748-103	-	AS350 / AS355 Stainless Steel Fwd Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
7	157387	D350-748-103	-	AS350 / AS355 Stainless Steel Fwd Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
8	162388	D119-796-241	-	Aft Crosstube Installation Without Step (No Hardware)		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00

 skyservice		Work Order Traveler Sky Service F.B.O. Inc.		PO 038325	
10105 Ryan Avenue, Dorval, Quebec, H9P 1A2					
TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385					
WO #: MWO33970		Customer:		Dept: NDT YUL	
Descr:		PN:		S/N:	
Make:		Model:		Reg:	
TSN:		CSN:		A/C S/N:	
Task: UNSCHEDULED					Sequence: 1

Work Required:

CARRY OUT NDT ON 8 CROSSTUBES , 3 END FITTINGS AND 4 STRUTS AS PER PO038325

3 END FITTINGS , P/N# D4883-7 , J/S# 166319

4 STRUTS , P/N# D4880-1 , J/S# 166320

2 STAINLESS STEEL FWD CROSSTUBES , P/N# D350-748-103 , J/S# 157387 , 164731

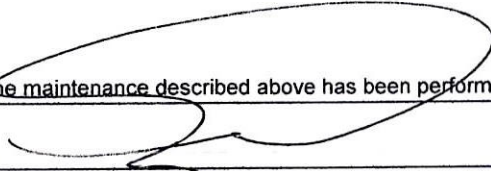
2 STAINLESS STEEL AFT CROSSTUBES , P/N# D350-748-203 , J/S# 164645 , 158989

2 AFT CROSSTUBES , P/N# D119-796-241 , J/S# 163790 , 162388

2 FWD CROSSTUBES , P/N# D119-796-141 , J/S# 164477 , 165700

Action Taken: LPI C/O IAW ASTM E-1417M-13 ***NO CRACK FOUND*** PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , EMU. MPO15896, DEV. MPO11715 , UV LIGHT M-20142						Date: NOV 10 2017	Initial/Stamp: 
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 		ACA/SCA Stamp 	Date: NOV 10 2017
Name: RAFIK MELIKIAN			



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Inventory

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Part Number: D350-748-103 Revision: AS350 / AS355 Stainless Steel Fwd Crosstube														
250	QC21-FG	S010256	164731	1 Ea	0	S010256	FG035	Bin	Stock	11/15/2017	Issue Container			CHG001
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Part Number: NAS1149D0463J Revision: Washer														
100	Receive Ea	S014940	164731	32 Ea	0		ST263		Stock	11/29/2017	Issue Container			
Operation Totals:		1		32	0									
Part Totals:		1		32	0									
Totals:		2		33	0									

Plex 1/8/2018 12:58 PM Dart.Boucher.Sylvie